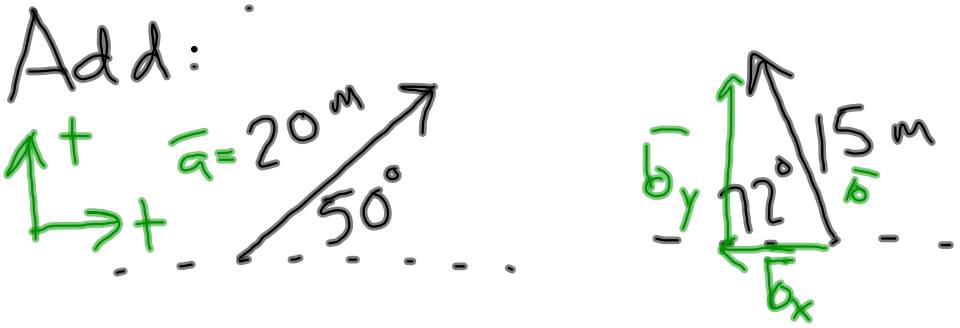
Add:



$$a_x + b_x = c_x$$

$$a\cos\theta_1 + b\cos\theta_2 = c_x$$

$$(20\text{ m})\cos(50^\circ) - (15\text{ m})\cos(72^\circ) = c_x$$

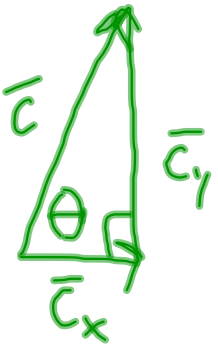
$$c_x = 8.22\text{ m}$$

$$a_y + b_y = c_y$$

$$a\sin\theta_1 + b\sin\theta_2 = c_y$$

$$(20\text{ m})\sin(50^\circ) + (15\text{ m})\sin(72^\circ) = c_y$$

$$c_y = 29.6\text{ m}$$



$$c^2 = c_x^2 + c_y^2$$

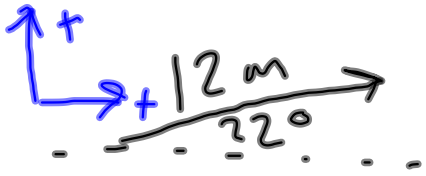
$$c = 30.7\text{ m}$$

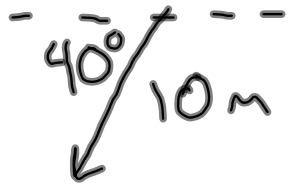
$$\theta = \tan^{-1}\left(\frac{c_y}{c_x}\right)$$

take absolute value

$$= 74.4^\circ$$

$$\bar{c} = 30.7\text{ m} \text{ @ } 74.4^\circ \text{ N of E}$$





$a_x = 11.1\ m$

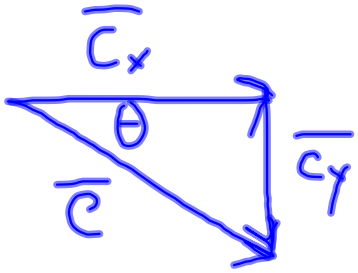
$+b_x = -7.66\ m$

$c_x = 3.44\ m$

$a_y = 4.49\ m$

$+b_y = -6.413\ m$

$c_y = -1.93\ m$



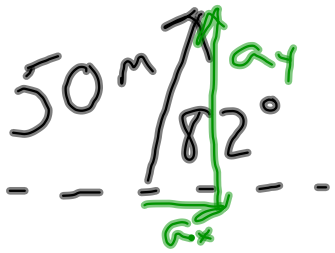
$\theta = \tan^{-1}\left(\frac{c_y}{c_x}\right)$

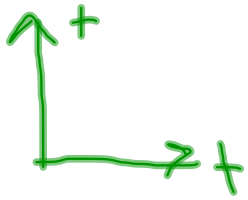
$= 29.8°$

S of E

$c = 3.97\ m$

$\bar{c} = 3.97\ m\ @\ 29.8°$ S of E





$a_x = 6.96$ m

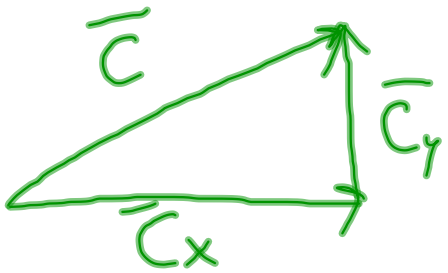
$+ b_x = 63.7$ m

$c_x = 70.7$ m

$a_y = 19.5$ m

$+ b_y = 20.7$ m

$c_y = 28.8$ m



$\theta = \tan^{-1}\left(\frac{c_y}{c_x}\right)$

$= 22.2°$

N of E

$C = 76.3$ m

$\bar{C} = 76.3$ m @ 22.2° N of E